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21 April 1953

MEMORANDUM FOR: Office of Communications, Engineering Division,
Alcott Hall

SUBJECT: APD Infra-Red Research, Development and Operational
Support.

1. On 17 April 1953 [] Office of Commu-
nications contacted C/TSS/APD regarding TSS activity in the subject
field. Since the Office of Communications has been approached
with operational requirements in this field, an investigation of
Agency, other governmental and industrial activities in this field
is being made prior to making recommendations and proposals to their
research and development board.

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2. The following summary of TSS activity in this field may
be of assistance in offering guidance to the Communications Research
and Development Board since it reflects the extent to which this
program is already underway in TSS/APD.

a. In December of 1951, as the result of operational
requirements, a series of projects were authorized in TSS
for the research, development and production of Infra-red
field marking equipment. These projects carry the project
numbers P-60A, P-60B, P-60C and P-81. As a necessary ad-
junct in this endeavor, literature studies were and are being
conducted in all fields relating to this program and close
liaison with other parallel governmental and industrial
developments has been established and closely maintained.
Accordingly, considerable literature and prototype gear has
been accumulated in APD in the form of Infra-red light sources,
viewers, metasopes, etc. In addition, several contracts have
been let by TSS which have resulted in the acquisition and
development of improved infra-red filtering materials and an
infra-red mantle type gasoline lamp which is operative for
approximately 8 hours on 1 1/2 pints of gasoline.

b. Furthermore, photographic operational requirements
have and are being met, which have necessitated research and
development in cameras, light sources, film, filter material
and remotely controlled infra-red triggering and control links.

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Enclosure (2)

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This work is being carried on under Projects P-94 and P-98, both internally and externally, where knowledgeable industrial firms can contribute to this program.

c. More recently, operational requirements for short range coded and two-way voice communication links employing very portable equipment, effective over several miles, have been accepted and prototype units have and are being assembled internally to meet several "crash" requirements. This program has also been supplemented by several industrial contracts and proposals have been accepted reflecting that effective line-of-sight communication between 10 and 20 miles may be anticipated. This work is being carried out under projects P-84 and P-101. Requirements upon which these endeavors are based are for the support of land operations, ship-to-shore operations, etc. and accordingly, Army, Navy, Air and Signal Corps developments, information and assistance is being exploited in all instances to supplement and instrument the TSS program.

3. The previous paragraph summarizes briefly TSS interests in the subject field and it is pointed out that TSS/APD would be pleased to consider absorbing the operational requirements levied upon the Office of Communications, insofar as they relate to items discussed in paragraph two. Should this approach to the over-all Agency program be deemed advisable, inter-office cooperation, particularly insofar as it pertains to battery sources and hand generator sources as auxiliary components of many of these systems, would be appreciated.

4. Additional information regarding this subject can be had by contacting TSS/APD,

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